BULL. BOT. SURV. INDIA
Vol. 14, Nos. 1-4 : pp. 144-148, 1972

ASRAOA TRIANDRA (ARECACEAE)—A NEW GENUS AND SPECIES OF PALM FROM LOHIT DISTRICT, ARUNACHAL PRADESH

J. JOSEPH

Botanical Survey of India, Coimbatore

ABSTRACT

A slender, simple stemmed palm, superficially resembling *Wallichia* Roxb. and *Didymosperma* Wendl. & Drude but distinctive in its 3-stamened male flowers, collected from Lohit District, Arunachal Pradesh is described.

INTRODUCTION

In a reconnoitering plant exploration programme in Lohit District, Arunachal Pradesh, in September, 1969, while descending the steep slope of a hill immediately overlooking the Inspection Bungalow at Hayuliang, Dr. A. S. Rao came upon a thin clump of slender palms, which was duly collected. It was a monoecious plant with a few fresh male spadices and a lone female spadix with the ripe fruits all shed, with a chance remnant of a solitary red drupe, on the scarred spike. The subsequent search for more flowering materials merely yielded several more, scattered clumps, but all with no spadices. However, in a later more elaborate exploration programme, in the Lohit District, with several sister Surveys participating (The Daphabum Scientific Surveys Expedition, Nov. 1969-Jan. 1970 under the auspices of the Geological Survey of India), the author who had earlier accompanied Dr. A. S. Rao and seen the original collections, was able to recognise many clumps in different localities. They were female ones, either with fresh spadices or with the previous seasons bare ones except for a very few, with mature fruits. Not a single plant with either fresh or old male spadices, either in monoecious or dioecious condition could be found.

The palm has proved to be distinctive on study, and has been accordingly described. In a horticultural setting this palm may prove as decorative as the many other palms already under cultivation.

Asraoa gen. nov. J. Joseph

Plantae simplices, erectae, caespitosae, dioeciae, raro monoeciae. *Caules* tenuae, dense obtecti, fibris vaginarum. *Folia* conferta ad apicem, pinnatisecta, ad basim longe vaginata. *Foliola* irregulariter trapezoidea infra argenteo alba, opposita ad subopposita vel alternata, margine ad apicem spinulose dentata. *Spadices* inter foliacei, folio multo breviores, arcuati. *Spadices masculi* subterminales. Folisculi masculi tenues, cylindrici; perianthium exteriore annularum, perianthium interiore multo longiore. Stamina 3, ovarii vestigia nulla. *Spadices feminei* terminaes. *Flosculi feminei,* globosi; perianthii segmenta 3+3, inaequalia, crassa. *Ovarium* uniloculare, 1-ovulatum. Fructus drupaceus; albumine aequabile.

Species typica sequens.

Asraoa triandra J. Joseph sp. nov.

Caules *ca* 3 m alti, 3-5 cm crassi. Folia 1-2 m longa, vaginata ad basim; foliola 11-18 juga, praemorsa, margine spinuloso-dentata. Spadices *ca* 35 cm longi, arcuati. Spathae imbricatae, ovatae vel anguste lanceolatae, apices laterale 2-fidae. *Flosculi feminei ca* 4 mm alti, parvi, globosi, sessiles, viridibrunnei. Perianthium exteriore acetabuliforme, obscure trilobatum, segmentis rotundatis praeditum. Perianthium interiore crassum *ca* 3 mm altum, longiore, distincte supra medium trilobatum, segmentis ovatis, valvatis praeditum. Staminodia nulla. Ovarium uniloculare, 1-ovulatum, stigmatibus terminalibus, circularis, atro-brunneis. *Flosculi masculi* anguste cylindrici, 7-9 × 1 mm atro-violacei, sessiles, erecti, sparsi, deciduoi. Perianthium exteriore annulariforme, 1·0-1·5 mm, margine integerum et undulatum, 1-1·5 mm altum. Perianthum interiore multo longiore, exceptis ad basim tripartitum, segmentis 6-8 m longis, crassis, anguste lanceolatis praeditum. Stamina 3, pendula, 6-7 mm longa ; filamentis ad basim crassis, ±2·5 mm longis ; antherae lineares, 4-5 mm longae, sagittatae, valde conspicuae dorsilongae, ± 13 × 7 mm, atrorubrae vel atropurpureae ; epicarpio crasso, mesocarpio tenfixae. Pistillodium nullum. Drupae obui, pulposi, endorarpio duro. Semina erecta ; albumine aequabile.

Holotypus *A. S. Rao* 48105 A (CAL) et Isotypi *A. S. Rao* 48105 B-F (ASSAM) die 25 Septembris anni 1969 ad Hayuliang, Paratypi (ASSAM) *J. Joseph* 48420 A-E ad Wakroo, die 3 Decembris anni 1969 *J. Joseph* 48566 A-C ad Glow Village die 10 Decembris 1969 et *J. Joseph* 48951 A et B ad Hayuliang, die 14 Januarii anni 1970, alti. 900-2000 m, Lohit District, Arunachal Pradesh.

Asraoa gen. nov. J. Joseph

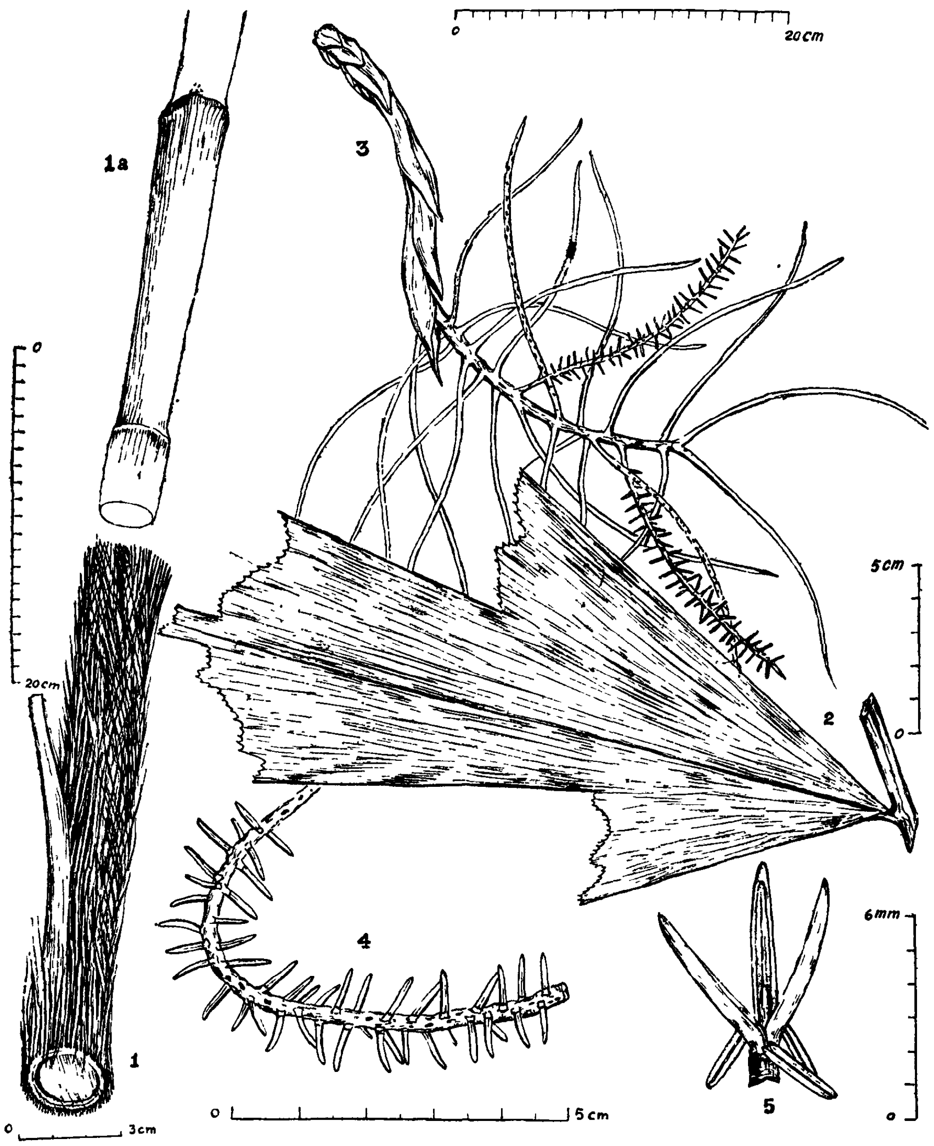
Erect palms in clumps, dioecious, rarely monoecious. *Stem* slender, simple, densely sheathed all along with a mat of dark brown coarse fibres. *Leaves* crowded at apex, pinnatisect, long-sheathing at base. *Leaflets* irregularly trapezoid, silvery white beneath, opposite to subopposite and alternate ; apical margins praemorse, spinulosely toothed. *Spadices* interfoliar, much shorter than the leaves, arcuate ; peduncle concealed by overlapping spathes, *spikes* spreading. *Male spadix* subterminal ; *florets* slender, cylindrical ; *outer perianth* annular ; *inner perianth* much longer than the outer. *Stamens* 3, pistillode absent. *Female spadix* terminal, *florets* globose, perianth 3+3, unequal, thick, slightly accrescent in fruit ; *ovary* unilocular, 1-ovuled ; stigmatic surface terminal, on the ovary, circular, dark brown ; staminode absent. *Fruit* a drupe, 1-seeded ; albumen equable.

The genus name is after the collector.

Type Species: *Asraoa triandra* J. Joseph.

Asraoa triandra J. Joseph sp. nov.

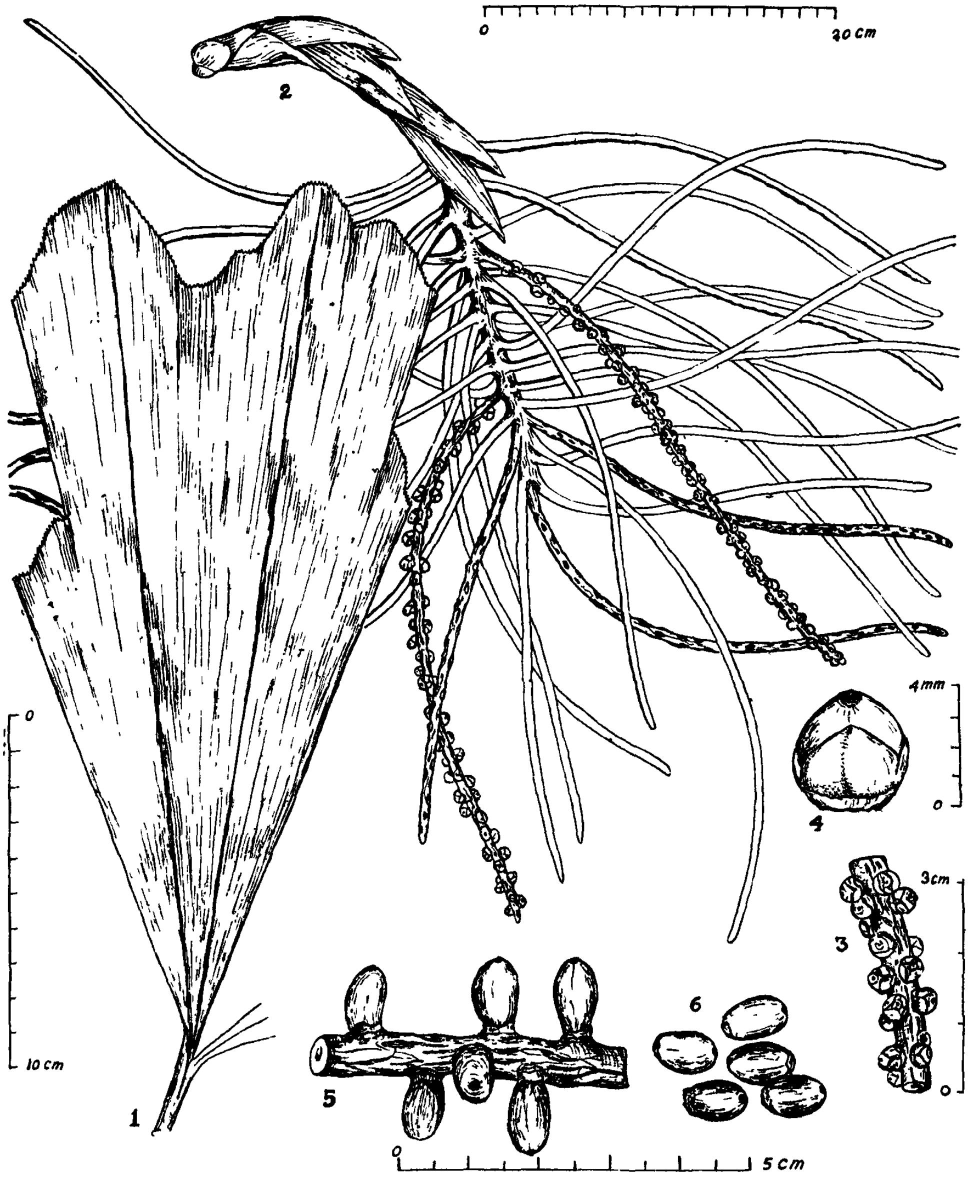
Stem about 3 m high, 3-5 cm in diameter, in thin clumps, unbranched, more or less uniformly thick, densely covered with dark brown sheath-fibres, cane-like when sheath-fibres removed ; internodes 10-20 cm long. *Leaves* unequal in length, lower ones shorter, 1-2 m long ; rachis ridged, scurfy, unequally pinnatisect, firmly-sheathing at base ; sheaths scurfy externally, overlapping, tubular at base, laterally split above, with long dark-brown fibres along the margins. *Leaflets* opposite to subopposite and alternate, 11-19 pairs, fewer in the ultimate leaf, irregularly trapezoid, cuneate, subsessile, silvery white beneath, dull-green above, 20-40 cm long, upto 10 cm broad, unicostate ; terminal leaflet di- or tri-costate ; apical margins praemorse, spinulosely toothed ; nerves flabellate. *Spadices* arcuate, ±35 cm long, interfoliar, with many spreading spikes. *Peduncle* tightly covered by progressively large overlapping spathes. *Spathes* about 8, conduplicate, ovate to narrow lanceolate, dull brown, leathery, imbricate, tubular at base, laterally split above. *Male spadix* subterminal, several per plant, axillary, smaller than the female, with slender peduncle ; *spikes* filiform ± 16 cm long ; *florets* many, narrow, cylindrical, sessile, erect, scattered, dark-violet, 7-9 × 1 mm, deciduous ; *outer perianth* annular, entire to wavy at margins, 1-1·5 mm high ; *inner perianth* much longer than the outer, tripartite except at the very base ; segments 6-8 mm long, thick, narrowly lanceolate, valvate, diverging from the base when opened out ; inner surface concave with a callus at the base, longitudinally ridged beyond the callus ; *callus* ± 2 mm,



Asraoa triandra J. Joseph sp. nov.

Figs. 1-5: 1. Piece of stem with sheath-fibres. 1a. Stem with sheath-fibres removed. 2. Lateral leaflet. 3. Male spadix. 4. A part of male spike. 5. Male floret opened. (A. S. Rao 48105 B)

oblong. *Stamens* 3 only, pendulous 6-7 mm long; *filament* thickened towards base ±2·5 mm long; *anther* linear-sagittate, very conspicuous, 4-5 mm, twice or more longer than filament, dorsifixed. *Pistillode* absent. *Female spadix* terminal, solitary per plant; *peduncle* stout; *spikes* 20-30 cm long, many, more or less closely clustered on the rachis; *florets* ± 4 mm high, small, globose, sessile, greenish brown, scattered uniformly on the thick rachis. *Outer perianth* saucer shaped, obscurely 3-lobed, ± 4 mm across; lobes rounded, well appressed to the inner perianth; *inner perianth* thicker, ± 3 mm high, larger than the outer, distinctly 3-lobed above the middle; lobes ovate, obtuse, valvate; perianth slightly accrescent in fruit; *ovary* 1-celled, 1-ovuled; stigmatic surface circular,



Asraoa triandra J. Joseph sp. nov.

Figs. 1-6: 1. Terminal leaflet. 2. Female spadix. 3. Part of spike. 4. Female floret. 5. Piece of fruiting spike. 6. Detached fruits. (J. Joseph 48951 A)

dark-brown, terminal on the ovary; *staminode* absent. *Fruit* a drupe, oblong, ± 13 × 7 mm, deep red or dark purple when ripe; epicarp thick, leathery; mesocarp thin, pulpy; endocarp hard. *Seed* erect, single; albumen equable.

Flowering: Male: Sept.-Oct.; female: Dec.-Jan.

Fruiting: Aug.-Jan.

Holotype: *A. S. Rao* 48105 A (CAL.) and *Isotypes*: *A. S. Rao* 48105 B-F (ASSAM), Hayuliang, 25th September, 1969. *Paratypes*: (ASSAM) *J. Joseph* 48420 A-E, Wakroo, 3rd December, 1969. *J. Joseph* 48566 A-C from around Glow village, 10th December, 1969 and *J. Joseph* 48951 A & B Hayuliang, 14th January, 1970. Between 96°-97°E. Long. and 27°30′-28°30′ N. Lat., Lohit District, Arunachal Pradesh.

Common in dense tropical and subtropical forests on humus soil, amidst thick undergrowth, at altitudes between 900-2000 m.

The slender cane-like stem, tightly ensheathed in coarse fibres and the 3-stamened male flowers distinguish this interesting palm from other known genera of Arecaceae, especially *Wallichia* Roxb. and *Didymosperma* Wendl. & Drude, to which it has some superficial resemblance in the vegetative characters. According to Dr. H. E. Moore Jr. of L. H. Bailey Hortorium, this palm is more akin to *Wallichia* Roxb.

Short, erect and slender among dense shrubs of thick forests, this palm is quite unobtrusive and often escapes attention of a casual collector. They are not of any utility to local people as compared to other palms and canes, found in these forests. A deliberate search for this modest palm, usually in slender clumps and practically camouflaged by other associate plants will very likely discover it in other regions of the Arunachal Pradesh-Himalayas.

ACKNOWLEDGEMENTS

My thanks to Dr. H. E. Moore Jr., L. H. Bailey Hortorium, Cornell University, U.S.A. for his valuable opinion regarding the identity of the palm. I am also grateful to the Director, Botanical Survey of India, for facilities.